

## CLAIMS

1. A multi-contact woven power connector, comprising:
  - a set of loading fibers;
  - a set of conductors, wherein each conductor of said set has at least one contact point; and
  - wherein each conductor of said set is woven with said set of loading fibers to create a weave wherein said weave defines a space, and wherein said loading fibers of said set are capable of delivering a contact force at each contact point of said set of conductors.
2. The multi-contact woven power connector of claim 1, wherein an electrical connection can be established between a first conductor and a second conductor.
3. The multi-contact woven power connector of claim 1, wherein said conductors are self-terminating.
4. The multi-contact woven power connector of claim 1, wherein said conductors are comprised of conducting wires.
5. The multi-contact woven power connector of claim 4, wherein said conducting wires have a diameter between approximately 0.0002 and approximately 0.0100 inches.

6. The multi-contact woven power connector of claim 4, wherein said conducting wires are ribbon-shaped wires.
7. The multi-contact woven power connector of claim 1, wherein said loading fibers are comprised of a non-conducting material.
8. The multi-contact woven power connector of claim 1, wherein said loading fibers are comprised of an elastic material.
9. The multi-contact woven power connector of claim 1, wherein said loading fibers are comprised of at least one material from the following list: nylon, fluorocarbon, polyaramids, polyamids, conductive metal or natural fiber.
10. The multi-contact woven power connector of claim 1, wherein said weave forms a woven tube having said space disposed therein.
11. The multi-contact woven power connector of claim 10, wherein said woven tube has a symmetrical cross-section.
12. The multi-contact woven power connector of claim 11, wherein said cross-section of said woven tube is circular.
13. The multi-contact woven power connector of claim 1, further comprising:

a tensioning spring, wherein at least one end of each loading fiber is coupled to said tensioning spring.

14. The multi-contact woven power connector of claim 1, further comprising:
  - a plurality of tensioning springs, wherein each loading fiber has a first end and a second end, and wherein said first end of each loading fiber is coupled to a tensioning spring.
15. The multi-contact woven power connector of claim 14, wherein said second end of at least one loading fiber is coupled to the same tensioning spring as said first end of said loading fiber.
16. The multi-contact woven power connector of claim 14, wherein each loading fiber is coupled to a separate tensioning spring.
17. The multi-contact woven power connector of claim 1, further comprising:
  - a mating conductor having a contact mating surface, wherein electrical connections can be established between said contact mating surface and said contact points of said set of conductors when said mating conductor is disposed within said space.
18. The multi-contact woven power connector of claim 17, wherein said contact mating surface is convex.

19. The multi-contact woven power connector of claim 18, wherein said contact mating surface is defined by a constant radius of curvature.
20. The multi-contact woven power connector of claim 17, wherein said mating conductor is substantially rod-shaped.
21. The multi-contact woven power connector of claim 21, wherein said mating conductor has a diameter from approximately 0.01 inches to approximately 0.4 inches.
22. The multi-contact woven power connector of claim 1, wherein said set of conductors comprises a power circuit or a return circuit.
23. The multi-contact woven power connector of claim 1, wherein said set of loading fibers is a first set of loading fibers, said set of conductors is a first set of conductors, said weave is a first weave and said space is a first space, said woven power connector further comprising:
  - a second set of loading fibers;
  - a second set of conductors, wherein each conductor of said second set has at least one contact point; and
  - wherein each conductor of said second set is woven with said second set of loading fibers to create a second weave wherein said second weave defines a second

space, and wherein said loading fibers of said second set are capable of delivering a contact force at each contact point of said second set of conductors.

24. The multi-contact woven power connector of claim 23, wherein said first set of conductors comprises a first power circuit and said second set of conductors comprises a second power circuit.
25. The multi-contact woven power connector of claim 23, wherein said first set of conductors comprises a power circuit and said second set of conductors comprises a return circuit.
26. The multi-contact woven power connector of claim 23, further comprising:  
a plurality of tensioning springs, wherein each loading fiber of said first set and said second set has a first end and a second end, and wherein said first end of each loading fiber of said first set and said second set is coupled to a tensioning spring.
27. The multi-contact woven power connector of claim 26, wherein said second end of at least one loading fiber is coupled to the same tensioning spring as said first end of said loading fiber.
28. The multi-contact woven power connector of claim 26, wherein each loading fiber of said first set and said second set is coupled to a separate tensioning spring.

29. The multi-contact woven power connector of claim 23, further comprising:

    a first mating conductor having a first contact mating surface, wherein electrical connections can be established between said first contact mating surface and said contact points of said first set of conductors when said first mating conductor is disposed within said first space;

    a second mating conductor having a second contact mating surface, wherein electrical connections can be established between said second contact mating surface and said conductors of said return circuit when said second mating conductor is disposed within said second space.

30. The multi-contact woven power connector of claim 29, wherein said first weave forms a first woven tube having said first space disposed therein and said second weave forms a second woven tube having said second space disposed therein, and wherein said first and second mating conductors are substantially rod-shaped.

31. A multi-contact woven power connector, comprising:

    a first set of loading fibers;

    a power circuit comprised of a plurality of conductors, wherein each conductor of said power circuit is woven with said first set of loading fibers to form a woven tube having a first space disposed therein;

    a second set of loading fibers;

a return circuit comprised of a plurality of conductors, wherein each conductor of said return circuit is woven with said second set of loading fibers to form a woven tube having a second space disposed therein;

a first rod-shaped mating conductor, wherein electrical connections can be established between said first rod-shaped mating conductor and said conductors of said power circuit when said first rod-shaped mating conductor is disposed within said first space; and

a second rod-shaped mating conductor, wherein electrical connections can be established between said second rod-shaped mating conductor and said conductors of said return circuit when said second rod-shaped mating conductor is disposed within said second space.

32. The multi-contact woven power connector of claim 31, further comprising:

a plurality of tensioning springs, wherein each loading fiber of said first set and said second set has a first end and a second end, and wherein at least said first end of each said loading fibers is coupled to a tensioning spring.

33. The multi-contact woven power connector of claim 32, wherein each said second end of a loading fiber is coupled to the same tensioning spring as said first end of said loading fiber.

34. The multi-contact woven power connector of claim 33, wherein each said loading fiber of said first set and said second set is coupled to a separate tensioning spring.